CERTIFICATION

SDG No:	1701428B	Laboratory:	Eurofins, Folson, CA
Site:	BMSMC	Matrix:	Air

SUMMARY: Air samples (Table 1) were collected on the BMSMC facility. The BMSMC facility is located in Humacao, PR. Samples were taken January 24 & 26, 2017 and were analyzed in Eurofins Laboratory of Folson, California that reported the data under SDG No.: 1701428B. Results were validated using the validation guidelines of Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999. USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #6. June, 2014). The analyses performed are shown in Table 1. Individual data review worksheets are enclosed for each target analyte group. The data sample summary form shows analyte results that were qualified.

In summary, the results are valid and can be used for decision making purposes.

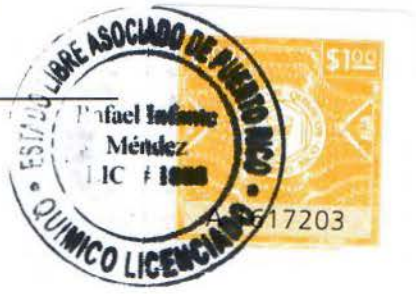
Table 1. Samples analyzed and analysis performed

SAMPLE ID	SAMPLE DESCRIPTION	MATRIX	ANALYSIS PERFORMED
1701428B-16A	B8SS-2-012417	Air	TO-15 (full suite)
1701428B-17A	B8SS-2D-012417	Air	TO-15 (full suite)
1701428B-18A	B18SS-1-012617	Air	TO-15 (full suite)
1701428B-19A	B18SS-1Dup-012617	Air	TO-15 (full suite)

Reviewer Name: Rafael Infante
Chemist License 1888

Signature:

Date: March 18, 2017



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Client Sample ID: B8SS-2-012417

Lab ID#: 1701428B-16A

EPA METHOD TO-15 GC/MS

File Name:	**14020610**	**Date of Collection:**	**1/24/17 3:35:00 PM**
Dil. Factor:	**24.9**	**Date of Analysis:**	**2/6/17 02:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	120	Not Detected	620	Not Detected
Freon 114	120	Not Detected	870	Not Detected
Chloromethane	500	Not Detected	1000	Not Detected
Vinyl Chloride	120	Not Detected	320	Not Detected
1,3-Butadiene	120	Not Detected	280	Not Detected
Bromomethane	500	Not Detected	1900	Not Detected
Chloroethane	500	Not Detected	1300	Not Detected
Freon 11	120	Not Detected	700	Not Detected
Ethanol	500	Not Detected	940	Not Detected
Freon 113	120	Not Detected	950	Not Detected
1,1-Dichloroethene	120	Not Detected	490	Not Detected
Acetone	500	Not Detected	1200	Not Detected
2-Propanol	500	Not Detected	1200	Not Detected
Carbon Disulfide	500	Not Detected	1600	Not Detected
3-Chloropropene	500	Not Detected	1600	Not Detected
Methylene Chloride	500	Not Detected	1700	Not Detected
Methyl tert-butyl ether	120	250	450	920
trans-1,2-Dichloroethene	120	Not Detected	490	Not Detected
Hexane	120	360	440	1300
1,1-Dichloroethane	120	Not Detected	500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	500	Not Detected	1500	Not Detected
cis-1,2-Dichloroethene	120	Not Detected	490	Not Detected
Tetrahydrofuran	120	Not Detected	370	Not Detected
Chloroform	120	Not Detected	610	Not Detected
1,1,1-Trichloroethane	120	Not Detected	680	Not Detected
Cyclohexane	120	1000	430	3600
Carbon Tetrachloride	120	Not Detected	780	Not Detected
2,2,4-Trimethylpentane	120	Not Detected	580	Not Detected
Benzene	120	Not Detected	400	Not Detected
1,2-Dichloroethane	120	Not Detected	500	Not Detected
Heptane	120	480	510	2000
Trichloroethene	120	Not Detected	670	Not Detected
1,2-Dichloropropane	120	Not Detected	580	Not Detected
1,4-Dioxane	500	Not Detected	1800	Not Detected
Bromodichloromethane	120	Not Detected	830	Not Detected
cis-1,3-Dichloropropene	120	Not Detected	560	Not Detected
4-Methyl-2-pentanone	120	Not Detected	510	Not Detected
Toluene	120	Not Detected	470	Not Detected
trans-1,3-Dichloropropene	120	Not Detected	560	Not Detected
1,1,2-Trichloroethane	120	Not Detected	680	Not Detected
Tetrachloroethene	120	Not Detected	840	Not Detected
2-Hexanone	500	Not Detected	2000	Not Detected

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Client Sample ID: B8SS-2-012417
Lab ID#: 1701428B-16A
EPA METHOD TO-15 GC/MS

File Name:	**14020610**	**Date of Collection:**	**1/24/17 3:35:00 PM**
Dil. Factor:	**24.9**	**Date of Analysis:**	**2/6/17 02:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	120	Not Detected	1100	Not Detected
1,2-Dibromoethane (EDB)	120	Not Detected	960	Not Detected
Chlorobenzene	120	Not Detected	570	Not Detected
Ethyl Benzene	120	Not Detected	540	Not Detected
m,p-Xylene	120	52 J	540	220 J
o-Xylene	120	Not Detected	540	Not Detected
Styrene	120	Not Detected	530	Not Detected
Bromoform	120	Not Detected	1300	Not Detected
Cumene	120	130	610	640
1,1,2,2-Tetrachloroethane	120	Not Detected	850	Not Detected
Propylbenzene	120	Not Detected	610	Not Detected
4-Ethyltoluene	120	Not Detected	610	Not Detected
1,3,5-Trimethylbenzene	120	Not Detected	610	Not Detected
1,2,4-Trimethylbenzene	120	Not Detected	610	Not Detected
1,3-Dichlorobenzene	120	Not Detected	750	Not Detected
1,4-Dichlorobenzene	120	Not Detected	750	Not Detected
alpha-Chlorotoluene	120	Not Detected	640	Not Detected
1,2-Dichlorobenzene	120	Not Detected	750	Not Detected
1,2,4-Trichlorobenzene	500	Not Detected	3700	Not Detected
Hexachlorobutadiene	500	Not Detected	5300	Not Detected
Naphthalene	500	Not Detected	2600	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: B8SS-2D-012417

Lab ID#: 1701428B-17A

EPA METHOD TO-15 GC/MS

File Name:	**14020611**	**Date of Collection:**	**1/24/17 3:35:00 PM**
Dil. Factor:	**24.2**	**Date of Analysis:**	**2/6/17 03:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	120	Not Detected	600	Not Detected
Freon 114	120	Not Detected	840	Not Detected
Chloromethane	480	Not Detected	1000	Not Detected
Vinyl Chloride	120	Not Detected	310	Not Detected
1,3-Butadiene	120	Not Detected	270	Not Detected
Bromomethane	480	Not Detected	1900	Not Detected
Chloroethane	480	Not Detected	1300	Not Detected
Freon 11	120	Not Detected	680	Not Detected
Ethanol	480	Not Detected	910	Not Detected
Freon 113	120	Not Detected	930	Not Detected
1,1-Dichloroethene	120	Not Detected	480	Not Detected
Acetone	480	Not Detected	1100	Not Detected
2-Propanol	480	Not Detected	1200	Not Detected
Carbon Disulfide	480	Not Detected	1500	Not Detected
3-Chloropropene	480	Not Detected	1500	Not Detected
Methylene Chloride	480	Not Detected	1700	Not Detected
Methyl tert-butyl ether	120	250	440	900
trans-1,2-Dichloroethene	120	Not Detected	480	Not Detected
Hexane	120	360	430	1300
1,1-Dichloroethane	120	Not Detected	490	Not Detected
2-Butanone (Methyl Ethyl Ketone)	480	Not Detected	1400	Not Detected
cis-1,2-Dichloroethene	120	Not Detected	480	Not Detected
Tetrahydrofuran	120	Not Detected	360	Not Detected
Chloroform	120	Not Detected	590	Not Detected
1,1,1-Trichloroethane	120	Not Detected	660	Not Detected
Cyclohexane	120	980	420	3400
Carbon Tetrachloride	120	Not Detected	760	Not Detected
2,2,4-Trimethylpentane	120	100 J	560	470 J
Benzene	120	Not Detected	390	Not Detected
1,2-Dichloroethane	120	Not Detected	490	Not Detected
Heptane	120	440	500	1800
Trichloroethene	120	Not Detected	650	Not Detected
1,2-Dichloropropane	120	Not Detected	560	Not Detected
1,4-Dioxane	480	Not Detected	1700	Not Detected
Bromodichloromethane	120	Not Detected	810	Not Detected
cis-1,3-Dichloropropene	120	Not Detected	550	Not Detected
4-Methyl-2-pentanone	120	Not Detected	500	Not Detected
Toluene	120	21 J	460	81 J
trans-1,3-Dichloropropene	120	Not Detected	550	Not Detected
1,1,2-Trichloroethane	120	Not Detected	660	Not Detected
Tetrachloroethene	120	Not Detected	820	Not Detected
2-Hexanone	480	Not Detected	2000	Not Detected

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Client Sample ID: B8SS-2D-012417

Lab ID#: 1701428B-17A

EPA METHOD TO-15 GC/MS

File Name:	**14020611**	**Date of Collection:**	**1/24/17 3:35:00 PM**
Dil. Factor:	**24.2**	**Date of Analysis:**	**2/6/17 03:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	120	Not Detected	1000	Not Detected
1,2-Dibromoethane (EDB)	120	Not Detected	930	Not Detected
Chlorobenzene	120	Not Detected	560	Not Detected
Ethyl Benzene	120	Not Detected	520	Not Detected
m,p-Xylene	120	64 J	520	280 J
o-Xylene	120	Not Detected	520	Not Detected
Styrene	120	Not Detected	520	Not Detected
Bromoform	120	Not Detected	1200	Not Detected
Cumene	120	120 J	590	580 J
1,1,2,2-Tetrachloroethane	120	Not Detected	830	Not Detected
Propylbenzene	120	Not Detected	590	Not Detected
4-Ethyltoluene	120	Not Detected	590	Not Detected
1,3,5-Trimethylbenzene	120	Not Detected	590	Not Detected
1,2,4-Trimethylbenzene	120	Not Detected	590	Not Detected
1,3-Dichlorobenzene	120	Not Detected	730	Not Detected
1,4-Dichlorobenzene	120	Not Detected	730	Not Detected
alpha-Chlorotoluene	120	Not Detected	630	Not Detected
1,2-Dichlorobenzene	120	Not Detected	730	Not Detected
1,2,4-Trichlorobenzene	480	Not Detected	3600	Not Detected
Hexachlorobutadiene	480	Not Detected	5200	Not Detected
Naphthalene	480	Not Detected	2500	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: B18SS-1-012617

Lab ID#: 1701428B-18A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020224**	**Date of Collection:**	**1/26/17 5:30:00 PM**
Dil. Factor:	**2.50**	**Date of Analysis:**	**2/3/17 01:54 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.63 J	6.2	3.1 J
Freon 114	1.2	Not Detected	8.7	Not Detected
Chloromethane	12	Not Detected	26	Not Detected
Vinyl Chloride	1.2	Not Detected	3.2	Not Detected
1,3-Butadiene	1.2	Not Detected	2.8	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	1.2	1.4	7.0	7.6
Ethanol	5.0	140	9.4	270
Freon 113	1.2	Not Detected	9.6	Not Detected
1,1-Dichloroethene	1.2	Not Detected	5.0	Not Detected
Acetone	12	12 J	30	29 J
2-Propanol	5.0	180	12	460
Carbon Disulfide	5.0	1.2 J	16	3.7 J
3-Chloropropene	5.0	Not Detected	16	Not Detected
Methylene Chloride	12	Not Detected	43	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	5.0	Not Detected
Hexane	1.2	Not Detected	4.4	Not Detected
1,1-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	2.1 J	15	6.2 J
cis-1,2-Dichloroethene	1.2	Not Detected	5.0	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.7	Not Detected
Chloroform	1.2	Not Detected	6.1	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.8	Not Detected
Cyclohexane	1.2	Not Detected	4.3	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.9	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.8	Not Detected
Benzene	1.2	0.22 J	4.0	0.71 J
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	Not Detected	5.1	Not Detected
Trichloroethene	1.2	Not Detected	6.7	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.8	Not Detected
1,4-Dioxane	5.0	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.4	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.7	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	1.4	4.7	[illegible]
trans-1,3-Dichloropropene	1.2	Not Detected	5.7	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.8	Not Detected
Tetrachloroethene	1.2	Not Detected	8.5	Not Detected
2-Hexanone	5.0	Not Detected	20	Not Detected

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Client Sample ID: B18SS-1-012617

Lab ID#: 1701428B-18A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020224**	**Date of Collection:**	**1/26/17 5:30:00 PM**
Dil. Factor:	**2.50**	**Date of Analysis:**	**2/3/17 01:54 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.6	Not Detected
Chlorobenzene	1.2	Not Detected	5.8	Not Detected
Ethyl Benzene	1.2	0.32 J	5.4	1.4 J
m,p-Xylene	1.2	1.0 J	5.4	4.6 J
o-Xylene	1.2	0.50 J	5.4	2.2 J
Styrene	1.2	Not Detected	5.3	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.1	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.6	Not Detected
Propylbenzene	1.2	Not Detected	6.1	Not Detected
4-Ethyltoluene	1.2	0.23 J	6.1	1.1 J
1,3,5-Trimethylbenzene	1.2	Not Detected	6.1	Not Detected
1,2,4-Trimethylbenzene	1.2	0.25 J	6.1	1.2 J
1,3-Dichlorobenzene	1.2	1.2 J	7.5	7.2 J
1,4-Dichlorobenzene	1.2	Not Detected	7.5	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.5	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.5	Not Detected
1,2,4-Trichlorobenzene	5.0	Not Detected	37	Not Detected
Hexachlorobutadiene	5.0	Not Detected	53	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: B18SS-1Dup-012617

Lab ID#: 1701428B-19A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020311**	**Date of Collection:**	**1/26/17 5:30:00 PM**
Dil. Factor:	**2.46**	**Date of Analysis:**	**2/3/17 06:37 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.50 J	6.1	2.5 J
Freon 114	1.2	Not Detected	8.6	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	4.9	Not Detected	13	Not Detected
Freon 11	1.2	1.6	6.9	9.2
Ethanol	4.9	240	9.3	460
Freon 113	1.2	Not Detected	9.4	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Acetone	12	20	29	47
2-Propanol	4.9	360	12	880
Carbon Disulfide	4.9	Not Detected	15	Not Detected
3-Chloropropene	4.9	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	43	Not Detected
Methyl tert-butyl ether	4.9	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Hexane	1.2	0.37 J	4.3	1.3 J
1,1-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.9	4.6 J	14	13 J
cis-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Tetrahydrofuran	1.2	0.15 J	3.6	0.45 J
Chloroform	1.2	Not Detected	6.0	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.7	Not Detected
Cyclohexane	1.2	Not Detected	4.2	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.7	Not Detected
2,2,4-Trimethylpentane	1.2	0.32 J	5.7	1.5 J
Benzene	1.2	0.21 J	3.9	0.67 J
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	0.48 J	5.0	2.0 J
Trichloroethene	1.2	Not Detected	6.6	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.7	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.2	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
4-Methyl-2-pentanone	1.2	1.9	5.0	7.8
Toluene	1.2	2.2	4.6	8.1
trans-1,3-Dichloropropene	1.2	3.7	[illegible]	17
1,1,2-Trichloroethane	1.2	0.58 J	6.7	[illegible]1 J
Tetrachloroethene	1.2	Not Detected	8.3	Not Detected
2-Hexanone	4.9	0.54 J	20	[illegible]2 J

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Client Sample ID: B18SS-1Dup-012617

Lab ID#: 1701428B-19A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020311**	**Date of Collection:**	**1/26/17 5:30:00 PM**
Dil. Factor:	**2.46**	**Date of Analysis:**	**2/3/17 06:37 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.4	Not Detected
Chlorobenzene	1.2	Not Detected	5.7	Not Detected
Ethyl Benzene	1.2	0.47 J	5.3	2.0 J
m,p-Xylene	1.2	1.8	5.3	7.8
o-Xylene	1.2	0.89 J	5.3	3.9 J
Styrene	1.2	0.15 J	5.2	0.64 J
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	0.29 J	6.0	1.4 J
1,1,2,2-Tetrachloroethane	1.2	0.070 J	8.4	0.48 J
Propylbenzene	1.2	0.13 J	6.0	0.66 J
4-Ethyltoluene	1.2	0.62 J	6.0	3.1 J
1,3,5-Trimethylbenzene	1.2	0.15 J	6.0	0.74 J
1,2,4-Trimethylbenzene	1.2	0.55 J	6.0	2.7 J
1,3-Dichlorobenzene	1.2	2.5	7.4	15
1,4-Dichlorobenzene	1.2	2.4	7.4	14
alpha-Chlorotoluene	1.2	Not Detected	6.4	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,2,4-Trichlorobenzene	4.9	Not Detected	36	Not Detected
Hexachlorobutadiene	4.9	Not Detected	52	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	102	70-130

Air Toxics LTD.

Chain-of-Custody Record

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Contact Person: Terry Taylor Company: Anderson Mulholland & Associates, Inc. Address: 2700 Winchester, Suite 417 City: Purchase State: NY Zip: 10577 Phone: 914-251-0400, x 309 FAX: Collected By: (Signature)	Project Information: P.O. # Project # Project Name: BMS VI Invest. Buildings 8,13, 5, 18, and 30	Turn Around Time: [X] Normal [ ] Rush Specify	Pressurized by: Date: Press. Gas: N2 He

Lab I.D.	Field Sample I.D.	Canister I.D.	Date & Time	Analysis Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
~~11A~~	B18IA-3-012117	34320	1/21/17:1810	TO-15, MeOH, CH_4	29 "Hg	6		
12A	B18IA-4-012117	W1591	1/21/17:1812	TO-15, MeOH, CH_4	29.5 "Hg	6		
13A	B8IA-2-012317	W1726	1/23/17:1223	TO-15, MeOH, CH_4	29 "Hg	8		
14A	B8IA-2D-012317	W0416	1/23/17:1223	TO-15, MeOH, CH_4	29 "Hg	9		
15A	B8AA-012317	00316	1/23/17:0920	TO-15, MeOH, CH_4	29 "Hg	3		
16A	B8SS-2-012417	11603	1/24/17:1535	TO-15, MeOH, CH_4	30 "Hg	5		
17A	B8SS-2D-012417	12373	1/24/17:1535	TO-15, MeOH, CH_4	29 "Hg	5		
18A	B18SS-1-012617	11720	1/26/17:1730	TO-15, MeOH, CH_4	30 "Hg	5		
~~19A~~	~~B18SS-1DUP-012617~~				"Hg			
20A	B18SS-1DUP-012617	W1929	1/26/17:1730	TO-15, MeOH, CH_4	30 "Hg	6		

V.V 1/30/17

V.V 1/30/17 19A

Relinquished By: (Signature) Date/Time	Received By: (Signature) Date/Time
1-27-17 1400	Fed EX
	1/28/17 0920

Notes:
FedEx Tracking No. 7782 9053 0772

Shipper Name	Air Bill #	Opened By	Temp ©	Condition	Custody Seals	Work Order #
Fed Ex		EATL	N/A	Good	Yes No (None)	1701428

EXECUTIVE NARRATIVE

SDG No:	**1701428B**	Laboratory:	**Eurofins, Folson, CA**
Analysis:	**TO-15**	Number of Samples:	**4**
Location:			

SUMMARY: Four (4) samples were analyzed for VOCs in ambient air following Compendium Method TO-15. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: "Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999"; USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #6. June, 2014). The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Results are valid and can be used for decision making purposes.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings:

1. Initial and continuing calibrations meet method specific requirements except for the cases described in the Data Review Worksheet. For analytes not meeting the % difference continuing calibration criteria their results qualified as estimated (J or UJ) in affected samples.

2. Several analytes detected at the method blank analyzed on 02/03/17.

3. LCS/LCSD (Blank spike) analyzed in this data package. % recoveries and RPD within laboratory control limits except for the cases described in the Data Review Worksheet. Positive results for Freon 113 and Naphthalene qualified as estimated (J).

4. Laboratory/field duplicate analyzed with this data package. RPD within laboratory and method performed criteria for analytes with concentration > 5 x SQL except for the cases described in the Data Review Worksheet. Results for acetone and benzene qualified (U) in affected samples as per Table 7. Blank actions for TO-15 Analyses.

5. Results for ethanol and 2-propanol qualified as estimated (J) in samples 1701428B-18A/1701428B-19A due to RPD exceeding the method performance criteria.

COMMENTS: Results are valid and can be used for decision making purposes.

Reviewers Name: Rafael Infante
Chemist License 1888

Signature:

Date: March 15, 2017

TO-15 DATA SAMPLE SUMMARY

Sample ID: 1701428B-16A
Sample location: BMSMC, Humacao, PR
Sampling date: 24-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	620	ug/m^3	24.9	-	U	Yes
Freon 114	870	ug/m^3	24.9	-	U	Yes
Chloromethane	1000	ug/m^3	24.9	-	U	Yes
Vinyl Chloride	320	ug/m^3	24.9	-	U	Yes
1,3-Butadiene	280	ug/m^3	24.9	-	U	Yes
Bromomethane	1900	ug/m^3	24.9	-	U	Yes
Chloroethane	1300	ug/m^3	24.9	-	U	Yes
Freon 11	700	ug/m^3	24.9	-	UJ	Yes
Ethanol	940	ug/m^3	24.9	-	U	Yes
Freon 113	950	ug/m^3	24.9	-	UJ	Yes
1,1-Dichloroethene	490	ug/m^3	24.9	-	U	Yes
Acetone	1200	ug/m^3	24.9	-	U	Yes
2-Propanol	1200	ug/m^3	24.9	-	U	Yes
Carbon Disulfide	1600	ug/m^3	24.9	-	U	Yes
3-Chloropropene	1600	ug/m^3	24.9	-	U	Yes
Methylene Chloride	1700	ug/m^3	24.9	-	U	Yes
Methyl tert-butyl ether	920	ug/m^3	24.9	-	-	Yes
trans-1,2-Dichloroethene	490	ug/m^3	24.9	-	U	Yes
Hexane	1300	ug/m^3	24.9	-	-	Yes
1,1-Dichloroethane	500	ug/m^3	24.9	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	1500	ug/m^3	24.9	-	U	Yes
cis-1,2-Dichloroethene	490	ug/m^3	24.9	-	U	Yes
Tetrahydrofuran	370	ug/m^3	24.9	-	U	Yes
Chloroform	610	ug/m^3	24.9	-	U	Yes
1,1,1-Trichloroethane	680	ug/m^3	24.9	-	U	Yes
Cyclohexane	3600	ug/m^3	24.9	-	-	Yes
Carbon Tetrachloride	780	ug/m^3	24.9	-	U	Yes
2,2,4-Trimethylpentane	580	ug/m^3	24.9	-	U	Yes
Benzene	400	ug/m^3	24.9	-	U	Yes
1,2-Dichloroethane	500	ug/m^3	24.9	-	U	Yes
Heptane	2000	ug/m^3	24.9	-	-	Yes
Trichloroethene	670	ug/m^3	24.9	-	U	Yes
1,2-Dichloropropane	580	ug/m^3	24.9	-	U	Yes
1,4-Dioxane	1800	ug/m^3	24.9	-	U	Yes
Bromodichloromethane	830	ug/m^3	24.9	-	U	Yes
cis-1,3-Dichloropropene	560	ug/m^3	24.9	-	U	Yes

4-Methyl-2-pentanone	510	ug/m^3	24.9	-	U	Yes
Toluene	470	ug/m^3	24.9	-	U	Yes
trans-1,3-Dichloropropene	560	ug/m^3	24.9	-	U	Yes
1,1,2-Trichloroethane	680	ug/m^3	24.9	-	U	Yes
Tetrachloroethene	840	ug/m^3	24.9	-	U	Yes
2-Hexanone	2000	ug/m^3	24.9	-	U	Yes
Dibromochloromethane	1100	ug/m^3	24.9	-	U	Yes
1,2-Dibromoethane (EDB)	960	ug/m^3	24.9	-	U	Yes
Chlorobenzene	570	ug/m^3	24.9	-	U	Yes
Ethyl Benzene	540	ug/m^3	24.9	-	U	Yes
m,p-Xylene	220	ug/m^3	24.9	J	J	Yes
o-Xylene	540	ug/m^3	24.9	-	U	Yes
Styrene	530	ug/m^3	24.9	-	U	Yes
Bromoform	1300	ug/m^3	24.9	-	U	Yes
Cumene	640	ug/m^3	24.9	-	-	Yes
1,1,2,2-Tetrachloroethane	850	ug/m^3	24.9	-	U	Yes
Propylbenzene	610	ug/m^3	24.9	-	U	Yes
4-Ethyltoluene	610	ug/m^3	24.9	-	U	Yes
1,3,5-Trimethylbenzene	610	ug/m^3	24.9	-	U	Yes
1,2,4-Trimethylbenzene	610	ug/m^3	24.9	-	U	Yes
1,3-Dichlorobenzene	750	ug/m^3	24.9	-	U	Yes
1,4-Dichlorobenzene	750	ug/m^3	24.9	-	U	Yes
alpha-Chlorotoluene	640	ug/m^3	24.9	-	U	Yes
1,2-Dichlorobenzene	750	ug/m^3	24.9	-	U	Yes
1,2,4-Trichlorobenzene	3700	ug/m^3	24.9	-	U	Yes
Hexachlorobutadiene	5300	ug/m^3	24.9	-	U	Yes
Naphthalene	2600	ug/m^3	24.9	-	U	Yes

Sample ID: 1701428B-17A
Sample location: BMSMC, Humacao, PR
Sampling date: 24-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	600	ug/m^3	24.2	-	U	Yes
Freon 114	840	ug/m^3	24.2	-	U	Yes
Chloromethane	1000	ug/m^3	24.2	-	U	Yes
Vinyl Chloride	310	ug/m^3	24.2	-	U	Yes
1,3-Butadiene	270	ug/m^3	24.2	-	U	Yes
Bromomethane	1900	ug/m^3	24.2	-	U	Yes
Chloroethane	1300	ug/m^3	24.2	-	U	Yes
Freon 11	680	ug/m^3	24.2	-	UJ	Yes
Ethanol	910	ug/m^3	24.2	-	U	Yes
Freon 113	930	ug/m^3	24.2	-	UJ	Yes
1,1-Dichloroethene	480	ug/m^3	24.2	-	U	Yes
Acetone	1100	ug/m^3	24.2	-	U	Yes
2-Propanol	1200	ug/m^3	24.2	-	U	Yes
Carbon Disulfide	1500	ug/m^3	24.2	-	U	Yes
3-Chloropropene	1500	ug/m^3	24.2	-	U	Yes
Methylene Chloride	1700	ug/m^3	24.2	-	U	Yes
Methyl tert-butyl ether	900	ug/m^3	24.2	-	-	Yes
trans-1,2-Dichloroethene	480	ug/m^3	24.2	-	U	Yes
Hexane	1300	ug/m^3	24.2	-	-	Yes
1,1-Dichloroethane	490	ug/m^3	24.2	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	1400	ug/m^3	24.2	-	U	Yes
cis-1,2-Dichloroethene	480	ug/m^3	24.2	-	U	Yes
Tetrahydrofuran	360	ug/m^3	24.2	-	U	Yes
Chloroform	590	ug/m^3	24.2	-	U	Yes
1,1,1-Trichloroethane	660	ug/m^3	24.2	-	U	Yes
Cyclohexane	3400	ug/m^3	24.2	-	-	Yes
Carbon Tetrachloride	760	ug/m^3	24.2	-	U	Yes
2,2,4-Trimethylpentane	470	ug/m^3	24.2	J	J	Yes
Benzene	390	ug/m^3	24.2	-	U	Yes
1,2-Dichloroethane	490	ug/m^3	24.2	-	U	Yes
Heptane	1800	ug/m^3	24.2	-	-	Yes
Trichloroethene	650	ug/m^3	24.2	-	U	Yes
1,2-Dichloropropane	560	ug/m^3	24.2	-	U	Yes
1,4-Dioxane	1700	ug/m^3	24.2	-	U	Yes
Bromodichloromethane	810	ug/m^3	24.2	-	U	Yes
cis-1,3-Dichloropropene	550	ug/m^3	24.2	-	U	Yes
4-Methyl-2-pentanone	500	ug/m^3	24.2	-	U	Yes
Toluene	81	ug/m^3	24.2	J	J	Yes

trans-1,3-Dichloropropene	550	ug/m^3	24.2	-	U	Yes
1,1,2-Trichloroethane	660	ug/m^3	24.2	-	U	Yes
Tetrachloroethene	820	ug/m^3	24.2	-	U	Yes
2-Hexanone	2000	ug/m^3	24.2	-	U	Yes
Dibromochloromethane	1000	ug/m^3	24.2	-	U	Yes
1,2-Dibromoethane (EDB)	930	ug/m^3	24.2	-	U	Yes
Chlorobenzene	560	ug/m^3	24.2	-	U	Yes
Ethyl Benzene	520	ug/m^3	24.2	-	U	Yes
m,p-Xylene	280	ug/m^3	24.2	J	J	Yes
o-Xylene	520	ug/m^3	24.2	-	U	Yes
Styrene	520	ug/m^3	24.2	-	U	Yes
Bromoform	1200	ug/m^3	24.2	-	U	Yes
Cumene	580	ug/m^3	24.2	J	J	Yes
1,1,2,2-Tetrachloroethane	830	ug/m^3	24.2	-	U	Yes
Propylbenzene	590	ug/m^3	24.2	-	U	Yes
4-Ethyltoluene	590	ug/m^3	24.2	-	U	Yes
1,3,5-Trimethylbenzene	590	ug/m^3	24.2	-	U	Yes
1,2,4-Trimethylbenzene	590	ug/m^3	24.2	-	U	Yes
1,3-Dichlorobenzene	730	ug/m^3	24.2	-	U	Yes
1,4-Dichlorobenzene	730	ug/m^3	24.2	-	U	Yes
alpha-Chlorotoluene	630	ug/m^3	24.2	-	U	Yes
1,2-Dichlorobenzene	730	ug/m^3	24.2	-	U	Yes
1,2,4-Trichlorobenzene	3600	ug/m^3	24.2	-	U	Yes
Hexachlorobutadiene	5200	ug/m^3	24.2	-	U	Yes
Naphthalene	2500	ug/m^3	24.2	-	U	Yes

Sample ID: 1701428B-18A
Sample location: BMSMC, Humacao, PR
Sampling date: 26-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	3.1	ug/m^3	2.50	J	J	Yes
Freon 114	8.7	ug/m^3	2.50	-	U	Yes
Chloromethane	26	ug/m^3	2.50	-	U	Yes
Vinyl Chloride	3.2	ug/m^3	2.50	-	U	Yes
1,3-Butadiene	2.8	ug/m^3	2.50	-	U	Yes
Bromomethane	48	ug/m^3	2.50	-	U	Yes
Chloroethane	13	ug/m^3	2.50	-	U	Yes
Freon 11	7.6	ug/m^3	2.50	-	-	Yes
Ethanol	270	ug/m^3	2.50	-	J	Yes
Freon 113	9.6	ug/m^3	2.50	-	U	Yes
1,1-Dichloroethene	5.0	ug/m^3	2.50	-	U	Yes
Acetone	30	ug/m^3	2.50	J	U	Yes
2-Propanol	460	ug/m^3	2.50	-	J	Yes
Carbon Disulfide	3.7	ug/m^3	2.50	J	J	Yes
3-Chloropropene	16.0	ug/m^3	2.50	-	U	Yes
Methylene Chloride	43	ug/m^3	2.50	-	U	Yes
Methyl tert-butyl ether	18	ug/m^3	2.50	-	U	Yes
trans-1,2-Dichloroethene	5.0	ug/m^3	2.50	-	U	Yes
Hexane	4.4	ug/m^3	2.50	-	U	Yes
1,1-Dichloroethane	5.0	ug/m^3	2.50	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	6.2	ug/m^3	2.50	J	J	Yes
cis-1,2-Dichloroethene	5.0	ug/m^3	2.50	-	U	Yes
Tetrahydrofuran	3.7	ug/m^3	2.50	-	U	Yes
Chloroform	6.10	ug/m^3	2.50	-	U	Yes
1,1,1-Trichloroethane	6.8	ug/m^3	2.50	-	U	Yes
Cyclohexane	4.3	ug/m^3	2.50	-	U	Yes
Carbon Tetrachloride	7.9	ug/m^3	2.50	J	J	Yes
2,2,4-Trimethylpentane	7.8	ug/m^3	2.50	-	U	Yes
Benzene	4.0	ug/m^3	2.50	J	U	Yes
1,2-Dichloroethane	5.0	ug/m^3	2.50	-	U	Yes
Heptane	5.10	ug/m^3	2.50	-	U	Yes
Trichloroethene	6.7	ug/m^3	2.50	-	U	Yes
1,2-Dichloropropane	5.8	ug/m^3	2.50	-	U	Yes
1,4-Dioxane	18	ug/m^3	2.50	-	U	Yes
Bromodichloromethane	8.4	ug/m^3	2.50	-	U	Yes
cis-1,3-Dichloropropene	5.7	ug/m^3	2.50	-	U	Yes
4-Methyl-2-pentanone	5.1	ug/m^3	2.50	-	U	Yes
Toluene	5.4	ug/m^3	2.50	-	-	Yes

trans-1,3-Dichloropropene	5.7	ug/m^3	2.50	-	U	Yes
1,1,2-Trichloroethane	6.8	ug/m^3	2.50	-	U	Yes
Tetrachloroethene	8.5	ug/m^3	2.50	-	U	Yes
2-Hexanone	20	ug/m^3	2.50	-	U	Yes
Dibromochloromethane	11	ug/m^3	2.50	-	U	Yes
1,2-Dibromoethane (EDB)	9.6	ug/m^3	2.50	-	U	Yes
Chlorobenzene	5.8	ug/m^3	2.50	-	U	Yes
Ethyl Benzene	1.4	ug/m^3	2.50	J	J	Yes
m,p-Xylene	4.6	ug/m^3	2.50	J	J	Yes
o-Xylene	2.2	ug/m^3	2.50	J	J	Yes
Styrene	5.3	ug/m^3	2.50	-	U	Yes
Bromoform	13	ug/m^3	2.50	-	U	Yes
Cumene	6.1	ug/m^3	2.50	-	U	Yes
1,1,2,2-Tetrachloroethane	8.6	ug/m^3	2.50	-	U	Yes
Propylbenzene	6.1	ug/m^3	2.50	-	U	Yes
4-Ethyltoluene	1.1	ug/m^3	2.50	J	J	Yes
1,3,5-Trimethylbenzene	6.1	ug/m^3	2.50	-	U	Yes
1,2,4-Trimethylbenzene	1.2	ug/m^3	2.50	J	J	Yes
1,3-Dichlorobenzene	7.2	ug/m^3	2.50	J	J	Yes
1,4-Dichlorobenzene	7.5	ug/m^3	2.50	-	U	Yes
alpha-Chlorotoluene	6.5	ug/m^3	2.50	-	U	Yes
1,2-Dichlorobenzene	7.5	ug/m^3	2.50	-	U	Yes
1,2,4-Trichlorobenzene	37	ug/m^3	2.50	-	U	Yes
Hexachlorobutadiene	53	ug/m^3	2.50	-	U	Yes
Naphthalene	13	ug/m^3	2.50	J	Ú	Yes

Sample ID: 1701428B-19A
Sample location: BMSMC, Humacao, PR
Sampling date: 26-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.5	ug/m^3	2.46	J	J	Yes
Freon 114	8.6	ug/m^3	2.46	-	U	Yes
Chloromethane	25	ug/m^3	2.46	-	U	Yes
Vinyl Chloride	3.1	ug/m^3	2.46	-	U	Yes
1,3-Butadiene	2.7	ug/m^3	2.46	-	U	Yes
Bromomethane	48	ug/m^3	2.46	-	U	Yes
Chloroethane	13	ug/m^3	2.46	-	U	Yes
Freon 11	9.2	ug/m^3	2.46	-	-	Yes
Ethanol	460	ug/m^3	2.46	-	J	Yes
Freon 113	9.4	ug/m^3	2.46	-	U	Yes
1,1-Dichloroethene	4.9	ug/m^3	2.46	-	U	Yes
Acetone	47	ug/m^3	2.46	-	U	Yes
2-Propanol	880	ug/m^3	2.46	-	J	Yes
Carbon Disulfide	15	ug/m^3	2.46	-	U	Yes
3-Chloropropene	15	ug/m^3	2.46	-	U	Yes
Methylene Chloride	43	ug/m^3	2.46	-	U	Yes
Methyl tert-butyl ether	18	ug/m^3	2.46	-	U	Yes
trans-1,2-Dichloroethene	4.9	ug/m^3	2.46	-	U	Yes
Hexane	1.3	ug/m^3	2.46	J	J	Yes
1,1-Dichloroethane	5.0	ug/m^3	2.46	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	13	ug/m^3	2.46	J	J	Yes
cis-1,2-Dichloroethene	4.9	ug/m^3	2.46	-	U	Yes
Tetrahydrofuran	0.45	ug/m^3	2.46	J	J	Yes
Chloroform	6.0	ug/m^3	2.46	-	U	Yes
1,1,1-Trichloroethane	6.7	ug/m^3	2.46	-	U	Yes
Cyclohexane	4.2	ug/m^3	2.46	-	U	Yes
Carbon Tetrachloride	7.7	ug/m^3	2.46	-	U	Yes
2,2,4-Trimethylpentane	1.5	ug/m^3	2.46	J	J	Yes
Benzene	3.9	ug/m^3	2.46	J	U	Yes
1,2-Dichloroethane	5.0	ug/m^3	2.46	-	U	Yes
Heptane	2.0	ug/m^3	2.46	J	J	Yes
Trichloroethene	6.6	ug/m^3	2.46	-	U	Yes
1,2-Dichloropropane	5.7	ug/m^3	2.46	-	U	Yes
1,4-Dioxane	18	ug/m^3	2.46	-	U	Yes
Bromodichloromethane	8.2	ug/m^3	2.46	-	U	Yes
cis-1,3-Dichloropropene	5.6	ug/m^3	2.46	-	U	Yes
4-Methyl-2-pentanone	7.8	ug/m^3	2.46	-	-	Yes
Toluene	8.1	ug/m^3	2.46	-	-	Yes

trans-1,3-Dichloropropene	17	ug/m^3	2.46	-	-	Yes
1,1,2-Trichloroethane	3.1	ug/m^3	2.46	J	J	Yes
Tetrachloroethene	8.3	ug/m^3	2.46	-	U	Yes
2-Hexanone	2.2	ug/m^3	2.46	J	J	Yes
Dibromochloromethane	10	ug/m^3	2.46	-	U	Yes
1,2-Dibromoethane (EDB)	9.4	ug/m^3	2.46	-	U	Yes
Chlorobenzene	5.7	ug/m^3	2.46	-	U	Yes
Ethyl Benzene	2.0	ug/m^3	2.46	J	J	Yes
m,p-Xylene	7.8	ug/m^3	2.46	-	-	Yes
o-Xylene	3.9	ug/m^3	2.46	J	J	Yes
Styrene	0.64	ug/m^3	2.46	J	J	Yes
Bromoform	13	ug/m^3	2.46	-	U	Yes
Cumene	1.4	ug/m^3	2.46	J	J	Yes
1,1,2,2-Tetrachloroethane	0.48	ug/m^3	2.46	J	J	Yes
Propylbenzene	0.66	ug/m^3	2.46	J	J	Yes
4-Ethyltoluene	3.1	ug/m^3	2.46	J	J	Yes
1,3,5-Trimethylbenzene	0.74	ug/m^3	2.46	J	J	Yes
1,2,4-Trimethylbenzene	2.7	ug/m^3	2.46	J	J	Yes
1,3-Dichlorobenzene	15	ug/m^3	2.46	-	-	Yes
1,4-Dichlorobenzene	14	ug/m^3	2.46	-	-	Yes
alpha-Chlorotoluene	6.4	ug/m^3	2.46	-	U	Yes
1,2-Dichlorobenzene	7.4	ug/m^3	2.46	-	U	Yes
1,2,4-Trichlorobenzene	36	ug/m^3	2.46	-	U	Yes
Hexachlorobutadiene	52	ug/m^3	2.46	-	U	Yes
Naphthalene	13	ug/m^3	2.46	-	U	Yes

Project Number:__1701428B___
Date:_____01/24_&_26/17____

REVIEW OF VOLATILE ORGANIC PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: QC criteria from "Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999"; USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #6. June, 2014). The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) _Eurofins_____ data package received has been reviewed and the quality control and performance data summarized. The data review for VOCs included:

Lab. Project/SDG No.: __1701477B_____ Sample matrix: ___Air_____
No. of Samples: _____4_____

Trip blank No.: _____-_____
Field blank No.: _____-_____
Equipment blank No.:___-_____
Field duplicate No.:__1701428B-16A/1701428B-17A;_1701428B-18A/1701428B-19A _____
_____

___X___ Data Completeness	___X___ Laboratory Control Spikes
___X___ Sampling Integrity/Preservation	___X___ Field Duplicates
___X___ GC/MS Tuning	___X___ Calibrations
___X___ Internal Standard Performance	___X___ Compound Identifications
___X___ Blanks	___X___ Compound Quantitation
___X___ Surrogate Recoveries	___X___ Quantitation Limits

Overall Comments:_____VOCs_(full_suite)_by_method_TO-15_____
_____

Definition of Qualifiers:

J- Estimated results
U- Compound not detected
R- Rejected data
UJ- Estimated nondetect

Reviewer:_____ Rafael Salazar _____
Date:__ _____03/15/17_____

DATA COMPLETENESS

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

All criteria were met __X___
Criteria were not met
and/or see below _____

SAMPLE INTEGRITY AND PRESERVATION

Canister used for sampling of the ambient air must be demonstrated clean, and leak free prior to sample collection. Cleanliness is demonstrated by the analysis of an individual canister or analysis of a representative canister, if only batch cleaning was required. Leak proof testing is performed on individual canisters. Canisters are used in conjunction with gauges, valves and flow controllers. Therefore, canister should be demonstrated clean and leak free inclusive of these components as appropriate.

a. Leak proof test:
Was the pressure of each canister measured before shipping? **Yes** or No
Was the pressure of each canister measured before sampling? **Yes** or No
Did the canister hold vacuum/pressure within +/- 2 psi from the date shipped to the sampling date? **Yes** or No

Note:

1. The laboratory should be notified if the difference between the laboratory and field pressure is greater than 2 psi.

Actions:

Actions for use of canisters with failing leak test criteria are indicated in Table 1 below.

Table 1. Canister Leak test Actions for TO-15 Analysis*

Matrix	Difference in initial and 24 hour pressure (psi) Criteria	Action	
		Detected Associated Compounds	Non-Detected Associated Compounds
Air	≤ 5	No qualification	
Air	> 5	J	UJ or R

*Excessive time period (> 3months) elapsed between leak test and actual use should be considered in evaluation of canister integrity.

b. Cleanliness

Integrity of the canister used for sampling of air for analysis should be maintained at all times including time of shipment to the field, sampling, shipping back to the laboratory and time of analysis. Analytical results of canister cleaning verification must be taken into account in the validation of sample results.

Does the canister meet the cleanliness criteria? **Yes** or No

Is the canister verification included in the data package? Yes or **No**

Actions:

Canister contamination actions are stated in Table 2 below.

Note: Laboratory stated that the SUMMA canisters employed were 100 % certified.

Table 2. Canister Contamination Actions for TO-15 Analyses

Contamination Type/level	Canister Cleaning Result	Sample Result	Action for Samples
Clean Canister analysis	Detects	Analytes found in clean canister analysis are non-detects	No qualification required
	<CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL and < 2x the CRQL	Report concentration of sample with a U
		≥ 2x the CRQL	No qualification required
	> CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL and ≤ clean canister value	Report clean canister value with a U
		≥ CRQL and > clean canister value	No qualification required
	= CRQL	≤ CRQL	Report CRQL value with a U
		> CRQL	No qualification required

c. Holding time and sample integrity

SUMMA canisters are to minimize sample charges or loss for majority of the analyte. Sample integrity is maintained by ensuring the system is closed tight and canister pressure from the time of sampling to the time of analysis is maintained within a difference allowable due to temperature change.

Was the canister pressure measured at the conclusion of the sampling period? **Yes** or No

Was the canister pressure measured upon arrival to the laboratory? **Yes** or No

Was the canister pressure difference between sampling and analysis less than 5 psi? **Yes** or No

Actions:

Qualify sample results using technical holding time information as stated in Table 3.

Pressure difference between sampling and analysis should be less than 5 psi. Qualify samples as per Table 3 requirements.

Table 3. Holding Time Actions for TO-15 Volatile Analyses

Matrix	Preserved (Pressure difference between sampling and analysis ≤ 5psi)	Criteria	Action	
			Detected Associated Compounds	Non-Detected Associated Compounds
Air	Yes	< 30 days	No qualification	
	Yes	>30 days	J	UJ
Air	No	< 30 days	J	UJ
	No	>30 days	J	R

Complete table for all samples and note the integrity and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE ANALYZED	Pressure difference < 5 psi	ACTION
All samples analyzed within the recommended method holding time. All summa canisters received in good conditions. Pressure difference < 5 psi between sampling and analysis.				

<u>The following pressure conversion is used, if necessary</u>

PRESSURE CONVERSION TABLE								
PSI	ATM	kgf/cm²	in.H_2O	mmHg	in.Hg	Kpa	Bar	mm H_2O
1	0.068046	0.070307	27.7276	51.715	2.03602	6.895	0.6895	704.28104
14.696	1	1.0332	407.484	760	29.921	101.325	1.01325	10350.0936
14.2233	0.96784	1	394.38	735.559	28.959	98.096	0.98067	10000
0.036092	0.002454	0.00253	1	1.8651	0.07343	0.249	0.00249	25.4
0.019336	0.001315	0.001359	0.53616	1	0.03937	0.1333	0.001333	13.618464
0.491154	0.0033421	0.03453	13.6185	25.4	1	3.3864	0.033864	345.9099
0.145	0.00987	0.010197	4.0186	7.5006	0.2953	1	0.01	102.07244
14.5038	0.98692	1.01972	402.156	750.062	29.53	100	1	10214.7624

All criteria were met __X___
Criteria were not met see below _____

GC/MS TUNING

The assessment of the tuning results is to determine if the sample instrumentation is within the standard tuning QC limits

Gas Chromatograph/Mass Spectrometer (GC/MS) Instrument Performance Check

Action:

NOTES: This requirement does not apply when samples are analyzed by the Selected Ion Monitoring (SIM) technique.
All mass spectrometer instrument conditions must be identical to those used during the sample analysis. Background subtraction actions resulting in spectral distortions for the sole purpose of meeting the method specifications are contrary to the Quality Assurance (QA) objectives, and are therefore unacceptable.

NOTES: No data should be qualified based on BFB or DFTTP failure. Instances of this should be noted in the narrative.
All ion abundance ratios must be normalized to m/z 95, the nominal base peak, even though the ion abundance of m/z 174 may be up to 120% that of m/z 95.

1. If samples are analyzed without a preceding valid instrument performance check, qualify all data in those samples as unusable (R).
2. If the laboratory has made minor transcription errors which do not significantly affect the data, the data reviewer should make the necessary corrections on a copy of the form.
3. If the laboratory has failed to provide the correct forms or has made significant transcription or calculation errors, the Region's designated representative should contact the laboratory and request corrected data. If the information is not available, the reviewer must use professional judgment to assess the data and notify the Project Officer (PO).
4. If ion abundance criteria are not met, professional judgment may be applied to determine to what extent the data may be utilized. When applying professional judgment to this topic, the most important factors to consider are the empirical results that are relatively insensitive to location on the chromatographic profile and the type of instrumentation. Therefore, the critical ion abundance criteria for BFB are the m/z 95/96, 174/175, 174/176, and 176/177 ratios. The relative abundances of m/z 50 and 75 are of lower importance. This issue is more critical for Tentatively Identified Compounds (TICs) than for target analytes.
5. Note, in the Data Review Narrative, decisions to use analytical data associated with BFB instrument performance check failures (not meeting contract requirements).
6. If the reviewer has reason to believe that instrument performance check criteria were achieved using techniques other than those described in the Compendium method TO-15 entitled "Determination Of Volatile Organic Compounds(VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry(GC/MS)", section 10.4, obtain additional information on the instrument performance checks. If the techniques employed are found to be at variance with the contract requirements, the performance and procedures of the laboratory may merit evaluation.
7. Use professional judgment to determine whether associated data should be qualified based on the spectrum of the mass calibration compound.

__X___ The BFB performance results were reviewed and found to be within the specified criteria.

__X___ BFB tuning was performed for every 24 hours of sample analysis.

If no, use professional judgment to determine whether the associated data should be accepted, qualified or rejected.

List the samples affected: _____

If mass calibration is in error, all associated data are rejected.

All criteria were met __X___
Criteria were not met
and/or see below _____

CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____12/01/2016_____
Date of initial calibration verification:_____-_____
Dates of continuing calibration:_02/02/17(10:10_AM);_02/06/17_(9:15_AM)_____
Instrument ID numbers:_____MSD-14_____
Matrix/Level:_____Air/low_____

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, %D, r	COMPOUND	SAMPLES AFFECTED
Initial and continuing calibrations meet method specific requirements except for the cases described in this document.				
02/06/17	1701428B-21B	35 %	Freon 11	1701428B-16A; 1701428B-17A
		34 %	Freon 113	

Note: Results qualified (J or UJ) in affected sample.

The following criteria apply:

Table 5. Initial Calibration Actions for TO-15 Analyses

Criteria for TO-15 Analysis	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
RRF < 0.010 (poor response volatile target compounds, Table 4) RRF < 0.050 (all other volatile target compounds)	J (based on mass spectral identification)	R
RRF > 0.010 (poor response volatile target compounds, Table 4) RRF > 0.050 (all other volatile target compounds)	No qualification	
% RSD > 40.0 or < -40.0 (poor response volatile target compounds, Table 4) % RSD > 30.0 or < -30.0 (all other Volatile target compounds)	No qualification	
% RSD < 40.0 and > -40.0 (poor response volatile target compounds, Table 4) % RSD < 30.0 and > -30.0 (all other volatile target compounds)	J	Use professional judgment

Table 6. Continuing Calibration Verification (CCV) Actions for TO-15 Analyses

Criteria for CCV	Action	
	Detected Associated Compounds	**Non-Detected Associated Compounds**
RRF < 0.010 (poor response volatile target compounds, Table 4) RRF < 0.050 (all other volatile target compounds)	J (based on mass spectral identification)	R
RRF > 0.010 (poor response volatile target compounds, Table 4) RRF > 0.050 (all other volatile target compounds)	No qualification	
%D > 40.0 or < -40.0 (poor response volatile target compounds, Table 4) %D > 30.0 or < -30.0 (all other Volatile target compounds)	J	UJ
%D < 40.0 and > -40.0 (poor response volatile target compounds, Table 4) %D < 30.0 and > -30.0 (all other volatile target compounds)	No qualification	

If the % D for daily calibration exceeds -90, use professional judgment to see if non-detects nee
to be qualified as unusable "R"

A separate worksheet should be filled for each initial curve

Table 4. TO 15 Volatile Compounds List*

Compound	**CAS Number**	**Synonyms**
Acetone	67-64-1	Dimethyl ketone; Dimethylformaldehyde; 2-Propanone
Allyl chloride	107-05-1	3-Chloropropene; 3-Chloroprene
Benzene	71-43-2	Benzol; Benzine
Benzyl chloride	100-44-7	Chloromethylbenzene; alpha-Chlorotoluene
Bromodichloromethane	75-27-4	Monobromodichloromethane; Methane-bromodichloro
Bromoethene	593-60-2	Vinyl bromide; Monobromoethene
Bromoform	75-25-2	Tribromoethane
Bromomethane	74-83-9	Methyl bromide; Monobromomethane
1,3-Butadiene	106-99-0	Biethylene; Erythrene; Pyrrolyene
Carbon disulfide	***75-15-0***	***Carbon bisulfide; Carbon sulfide***
Carbon tetrachloride	56-23-5	Carbon tet; Tetrachloromethane
Chlorobenzene	108-90-7	Monochlorobenzene; Chlorobenzol; Benzene chloride
Chloroethane	***75-00-3***	***Ethyl chloride; Chlorene; Chloryl***
Chloroethene	75-01-4	Vinyl chloride; Ethylene monochloride
Chloroform	67-66-3	Trichloromethane; Methyltrichloride; Methane trichloride
Chloromethane	***74-87-3***	***R40; Methyl chloride; Monochloromethane***
Cyclohexane	110-82-7	Hexamethylene; Hexahydrobenzene; Hexanaphthene
Dibromochloromethane	124-48-1	Chlorodibromomethane
1,2-Dibromoethane	***106-93-4***	***EDB; Ethylene dibromide***
1,2-Dichlorobenzene	95-50-1	ODB; Chloroben
1,3-Dichlorobenzene	541-73-1	meta-Dichlorobenzene; m-Phenylenedichloride
1,4-Dichlorobenzene	106-46-7	para-Dichlorobenzene; Parazene; Santochlor
1,1-Dichloroethane	75-34-3	Ethylidene chloride; Ethylidene dichloride
1,2-Dichloroethane	107-06-2	Ethylene dichloride; Glycol dichloride; 1,2-DCA
1,1-Dichloroethene	75-35-4	1,1-DCE; Vinylidene chloride
cis-1,2-Dichloroethylene	156-59-2	cis-1,2-DCE; cis-Acetylene dichloride
trans-1,2-Dichloroethylene	156-60-5	trans-1,2-DCE; trans-Acetylene dichloride
1,2-Dichloropropane	***78-87-5***	***Propylene dichloride; Propylene chloride***
cis-1,3-Dichloropropene	10061-01-5	1-Propene,1,3-dichloro-,(z)-; cis-1,3-Dichloro-1-Propene
trans-1,3-Dichloropropene	10061-02-6	trans-1,3-Dichloro-1-Propene; trans-1,3-Dichloropropylene
1,4-Dioxane	***123-91-1***	***Diethylene dioxide; Diethylene ether***
Ethyl acetate	141-78-6	Acetic acid ethyl ester; Acetic ether
Ethylbenzene	100-41-4	Ethylbenzol; Phenylethane
4-Ethyltoluene	622-96-8	1-Ethyl-4-methyl benzene; p-Methylethylbenzene
Freon 11 (CCl3F)	75-69-4	Trichlorofluoromethane; Fluorotrichloromethane; Fluorocarbon 11

Freon 12 (CCl2F2)	75-71-8	Dichlorodifluoromethane; Fluorocarbon 12
Freon 113 (C2Cl3F3)	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane; Fluorocarbon 113; 1,1,2-Trichlorotrifluoroethane
Freon 114 (C2Cl2F4)	76-14-2	1,2-Dichlorotetrafluoroethane; Halocarbon 114; 1,2-Dichloro-1,1,2,2-tetrafluoroethane
Heptane	142-82-5	Dipropylmethane; Heptyl hydride
Hexachlorobutadiene	87-68-3	1,3-Hexachlorobutadiene; Perchlorobutadiene
Hexane	110-54-3	n-Hexane; Hexyl hydride
2-Hexanone	591-78-6	Methyl butyl ketone; Butyl methyl ketone; Hexan-2-one
Isopropyl alcohol	67-63-0	2-Propanol; Isopropanol
Methylene chloride	***75-09-2***	***Dichloromethane; Methylene dichloride***
Methyl ethyl ketone	***78-93-3***	***MEK; 2-Butanone; Ethyl methyl ketone***
Methyl isobutyl ketone	108-10-1	MIBK; 2-Pentanone; Hexone; Isopropylacetone
Methyl tert-butyl ether	1634-04-4	MTBE; 2-Methoxy-2-methylpropane; tert-Butyl methyl ether
Propylene	115-07-1	Propene; Methylethylene
Styrene	100-42-5	Vinylbenzene; Phenylethylene
1,1,2,2-Tetrachloroethane	79-34-5	Tetrachloroethane; Acetylene tetrachloride; Bonoform
Tetrachloroethene	127-18-4	PCE; PERC; Perchloroethylene; Ethylene tetrachloride; Carbon bichloride; Carbon dichloride
Tetrahydrofuran	109-99-9	Diethylene oxide; Butylene oxide
Toluene	108-88-3	Toluol; Methylbenzene
1,2,4-Trichlorobenzene	120-82-1	1,2,4-Trichlorobenzol
1,1,1-Trichloroethane	71-55-6	Methyl chloroform; Trichloroethane
1,1,2-Trichloroethane	79-00-5	beta-Trichloroethane; Ethane trichloride; Vinyl trichloride
Trichloroethene	79-01-6	TCE; Acetylene trichloride; Ethinyl trichloride
1,2,4-Trimethylbenzene	95-63-6	Pseudocumene; Pseudocumol
1,3,5-Trimethylbenzene	108-67-8	Mesitylene; Trimethylbenzol
2,2,4-Trimethylpentane	540-84-1	Iso-octane; Isobutyltrimethylmethane
Vinyl acetate	108-05-4	Acetic acid ethenyl ether; Ethenyl acetate
p-Xylene	106-42-3	p-Methyltoluene; 1,4-dimethylbenzene
m-Xylene	108-38-3	m-Methyltoluene; 1,3-dimethylbenzene
o-Xylene	95-47-6	o-Methyltoluene; 1,2-Dimethylbenzene

*Laboratories use different sets and subsets of analytes on as needed basis.

NOTES:

Compounds in bold italicized letters may have poor GCMS response. These poor response compounds are evaluated using more relaxed relative response factor criteria as stated below.

All criteria were met _____
Criteria were not met
and/or see below ____X___

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

Blanks criteria and appropriate actions

Table 7. Blank Actions for TO-15 Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Storage, Field, Trip, Instrument***	Detects	Not detected	No qualification required
	< CRQL *	< CRQL*	Report CRQL value with a U
		≥ CRQL* and < 2x the CRQL**	Report concentration of sample with a "U"
		≥ 2x the CRQL**	No qualification required
	> CRQL *	< CRQL*	Report CRQL value with a U
		≥ CRQL* and ≤ blank concentration	Report blank value for sample concentration with a U
		≥ CRQL* and > blank concentration	No qualification required
	= CRQL*	≤ CRQL*	Report CRQL value with a U
		> CRQL*	No qualification required
	Gross contamination **	Detects	Report blank value for sample concentration with a U

* 2x the CRQL for methylene chloride, 2-butanone and acetone.
** 4x the CRQL for methylene chloride, 2-butanone, and acetone.
*** Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 µg/L.

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_All_method_blank_meet_method_specific_criteria_except_for_the_cases_described_in_this_____				
_document._____				
_02/03/17_____	_1701428B-20A_	_Air/low____	_Acetone_____	_0.58_ppbv_____
			_Benzene_____	_0.072_ppbv____

Note: Concentration detected below the reporting limit, results qualified following the table above.

Field/Equipment/Trip blank

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS

_No_field/trip/equipment_blanks_analyzed_with_this_data_package._

Field/trip blank actions

Field or Trip blank when available should be assessed for possible contaminants in the canister used for trip blank. This canister and its analytical results are specific to the trip blank sample **only**. If contaminants are present in the canister used for trip blank, its suitability for use as trip blank can be assessed using the following criteria.

Table 8. Field/Trip Blank suitability based on Canister contamination

Clean canister Result	Field/Trip Blank Result	Action for Field/Trip Blank
Detects	Not detected	No qualification, no action for samples is required
Detects	< clean canister result or ≥ clean canister result but < 2X the clean canister result	Report as non-detect "U", invalid as trip blank, no action for samples is required.
	≥ 2x the clean canister result	No qualification, valid trip blank for sample actions.

CONTAMINATION SOURCE/LEVEL	COMPOUND	CONC/UNITS	AL/UNITS	SQL	AFFECTED SAMPLES

All criteria were met __X___
Criteria were not met
and/or see below _____

SURROGATE SPIKE RECOVERIES

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.
List the percent recoveries (%Rs) which do not meet the criteria for surrogate recovery.
Matrix: solid/aqueous

SAMPLE ID	**SURROGATE COMPOUND**			**ACTION**
	1,2-DICHLOROETHANE-d4	**Toluene-d8**	**4-BFB**	

_Surrogate_recoveries_within_laboratory_control_limits_____
_____
_____
_____
_____
_____

QC Limits* (Air)

_____LL_to_UL___70__to_130__ _70__to_130_ _70__to_130__

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 80 – 120 % for aqueous and 70 – 130 % for solid samples.

Actions:

QUALITY	%R < 10%	%R = 10% - LL	%R > UL
Positive results	J	J	J
Nondetects results	R	UJ	Accept

Surrogate action should be applied:

If one or more surrogate in the VOC fraction is out of specification, but has a recovery of > 10%.

If any one surrogate in a fraction shows < 10 % recovery.

All criteria were met __X___
Criteria were not met
and/or see below _____

VIII. LABORATORY CONTROL SAMPLE (LCS) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices. LCS concentration should be in the middle of the calibration range and under the same sample conditions.

1. LCS Recoveries Criteria

Table 9. LCS/LCSD Actions for TO-15 Analyses

Criteria	Action	
	Detected Associated Compounds	Non-detected Associated Compounds
Percent recovery Criteria		
%R > Upper Acceptance Limit (>130%)	J	No qualification
%R in the acceptable range, 70-130%	No qualification	
%R < Lower Acceptance Limit (< 70 %)	J	UJ
%R < 50%	J	R
Lower Acceptance Limit ≤ %R ≤ Upper Acceptance Limit	No qualification	
Relative Percent Difference Criteria		
% RPD ≤ 25%	No qualification	
% RPD > 25 %	J	UJ

LCS ID COMPOUND % R QC LIMIT

LCS/LCSD(Blank_spike)_analyzed_in_this_data_package._%_recoveries_and_RPD_____
_within_laboratory_control_limits_except_for_the_cases_described_in_this_document._____

_____1701428B-22B_____Freon_113_____131_%_____70_-_130_%__
_____1701428B-22BB_____Naphthalene_____152_%_____60_-_140_%__
_____
_____
_____
_____

Note: Detected compounds are qualified with a J qualifier in affected samples.

2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix? **Yes** or No.
If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected.

All criteria were met _____
Criteria were not met
and/or see below _____X___

IX. FIELD/LABORATORY DUPLICATE PRECISION

Sample IDs:____LCS/LCSD_(lab)_____ Matrix:_____Air____
Sample IDs:____1701428B-16A/1701428B-17A____ Matrix:_____Air____
Sample IDs:____1701428B-18A/1701428B-19A____ Matrix:_____Air____

Field duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information. In the absence of QAPP guidance for validated data from field duplicates, the following action will be taken.

Identify which samples within the data package are field duplicates. Estimate the relative percent difference (RPD) between the vales for each compound. Note large RPDs (>50 %) in the narrative. Use professional judgment to qualify data when RPD > 50 %.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
1701428B-18A/1701428B-19A					
Ethanol	9.4	270	460	52	Qualify results (J in affected samples
2-propanol	12	460	880	63	
Laboratory/field duplicate analyzed with this data package. RPD within laboratory and method performed criteria for analytes with concentration > 5 x SQL except for the cases described in this document.					

Other suggested actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions apply:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

All criteria were met __X___
Criteria were not met
and/or see below _____

X. INTERNAL STANDARD PERFORMANCE

The assessment of the internal standard (IS) parameter is used to assist the data reviewer in determining the condition of the analytical instrumentation.

List the internal standard area of samples which do not meet the criteria.

* Area of +40% or -40% of the IS area in the associated calibration standard (CCV standard or mid-point from initial calibration).
* Retention time (RT) within ± 20 seconds of the IS area in the associated calibration standard.

Table 10. Internal Standard Actions for TO-15 Analyses

Criteria	Action	
	Detected Associated Compounds*	Non-detected Associated Compounds*
Area counts > 140% of CCV or mid-point standard from initial calibration)	J-	No qualification
Area counts < 60% of CCV or mid-point standard from initial calibration)	J+	R
Area counts ≥ 60% but ≤ 140% of CCV or mid-point standard from initial calibration)	No qualification	
RT difference > 20.0 seconds between samples CCV or mid-point standard from initial calibration)	R*	
RT difference < 20.0 seconds between samples and CCV or mid-point standard from initial calibration)	No qualification	

* Examine the chromatographic profile for that sample to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction. Detects should not need to be qualified as unusable (R) if the mass spectral criteria are met.

DATE	SAMPLE ID	IS OUT	IS AREA	ACCEPTABLE RANGE	ACTION

_Internal_standard_area_and_retention_times_within_laboratory_control_limits_for_both_samples_and_calibration_standards_____

All criteria were met __X___
Criteria were not met
and/or see below _____

XII. SAMPLE QUANTITATION

The sample quantitation evaluation is to verify laboratory quantitation results. In the space below, please show a minimum of one sample calculation:

1701428B-16A

Methyl-tert-butyl-ether RF = 3.20626

[ ] = (7212)(400)/(87894)(3.20626)

= 10.24 ppbv OK

All criteria were met __X___
Criteria were not met
and/or see below _____

XII. QUANTITATION LIMITS

A. Dilution performed

SAMPLE ID	DILUTION FACTOR	REASONS FOR DILUTION
Samples diluted by a factor of 2.50 or less except for the followings.		
1701428B-16A	24.9	Matrix interference
1701428B-17A	24.2	Matrix interference

System Performance

Action:

Use professional judgment to qualify the data if it is determined that system performance has degraded during sample analyses. Note, for Laboratory Project Officer (PO) action, any degradation of system performance which significantly affected the data.

Note:

Overall Assessment of Data

Action:

1. Use professional judgment to determine if there is any need to qualify data which were not qualified based on the Quality Control (QC) criteria previously discussed.
2. Write a brief narrative to give the user an indication of the analytical limitations of the data. Note, for Laboratory Project Officer (PO) action, any inconsistency of the data with the Sample Delivery Group (SDG) Narrative. If sufficient information on the intended use and required quality of the data is available, the reviewer should include their assessment of the usability of the data within the given context. This may be used as part of a formal Data Quality Assessment (DQA).

Overall assessment of the data: Results are valid; the data can be used for decision making purposes.